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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/851,939	05/10/2001	Marufa Kaniz	F0684	4053

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EXAMINER	
MURPHY, RHONDA L	

ART UNIT	PAPER NUMBER
2667	

DATE MAILED: 11/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/851,939	KANIZ ET AL.	
	Examiner	Art Unit	
	Rhonda Murphy	2667	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1-8* is/are allowed.

6)☒ Claim(s) *9,10,12,13 and 15-19* is/are rejected.

7)☒ Claim(s) *11 and 14* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *9/21/01*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 9,10,15 and 17 - 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Yazaki (US 6,768,738).

Regarding claim 9, Yazaki teaches receive ports receiving frames in a packet-switched network (Fig. 1, lines **123**), the frames having a source field indicating the source of the frame and a destination field indicating an intended destination for the frame (Fig. 4, fields **400-403**); transmit ports configured to transmit the frames in the packet-switched network (Fig. 1, lines **123**); an internal rules checking circuit (Fig. 1, unit **110**) coupled to receive input frame header information from the receive ports (Fig. 1, col. 13, lines 1-8) and configured to determine frame forwarding information that indicates which of the plurality of transmit ports the received frames should be transmitted from (col. 13, lines 3-8), the internal rules checking circuit including a plurality of frame lookup components operating in parallel (Fig. 12, tables **730** and **740**), each of the plurality of frame lookup components being associated with a common address table (Fig. 12, **condition check unit 720**), synchronously receiving the frame

header information received by the internal rules checking circuit (col. 14, lines 46-56), and identifying the frame forwarding information for the received frame header information from the common address table (col. 14, lines 46-56); and a port vector queue connected to the internal rules checking circuit (Fig. 1, **FIFO 121** connected to unit **110**), the port vector queue receiving the frame forwarding information identified by the internal rules checking circuit (col. 13, lines 56-65) and forwarding the frame forwarding information to appropriate ones of the transmit ports (col. 13, lines 66-67, col. 14, lines 1-27).

Regarding claim 10, Yazaki teaches a plurality of frame lookup components in the internal rules checking circuit further comprising a source address lookup component (located within table **730** and **740**) configured to access the common address table at a table address based on at least the source field of the received frame header information (col. 14, lines 46-56), and a destination address lookup component (located within table **730** and **740**) configured to access the address table at a table address based on at least the destination field of the received frame header information to obtain the frame forwarding information for the received frame (col. 14, lines 46-56).

Regarding claim 15, Yazaki teaches the table address accessed by the source address lookup components as being derived from a hashing algorithm that hashes at least the source field of the frame header (col. 17, lines 61-67, col. 18, lines 1-8).

Regarding claims 17 and 19, Yazaki teaches a method of determining frame forwarding information for frames received in a network device, the method comprising: receiving frames at the network device (Fig. 1, lines **123**), the frames including a source

field indicating the source of the frame (Fig. 4, fields **400, 402**) and a destination field indicating an intended destination for the frame (Fig. 4, fields **401, 403**); distributing the frames among a plurality of frame lookup components implemented in parallel with one another (Fig. 12, tables **730** and **740**), each of the frame lookup components coupled to a common address table (Fig. 12, **condition check unit 720**) and configured to look up a frame forwarding descriptor for each of the received frames from the common address table (col. 14, lines 57-67, col. 15, lines 1-12), the frame forwarding descriptor identifying the frame forwarding information (it is known in the art that frame forwarding descriptors provide information for forwarding a frame); receiving the frame forwarding descriptors from the plurality of frame lookup components (col. 15, lines 13-31) and transmitting the frame forwarding descriptors to an output queue corresponding to the frame forwarding descriptor (col. 16, lines 27-37); and transmitting the frames associated with the frame forwarding descriptors to output ports of the network device based on the content of the frame forwarding descriptors (col. 13, lines 56-67, col. 14, lines 1-27).

Regarding claim 18, Yazaki teaches the frame forwarding descriptors including a port vector field that indicates appropriate ones of the output ports (since the transmitted frames are associated with the frame forwarding descriptors, and the frame forwarding descriptors identify the correct output ports for transmission, the frame forwarding descriptors must include a port vector field which indicates that particular output port).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 12 – 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yazaki in view of Sang et al (US 6,577,636).

Regarding claims 12 and 13, Yazaki teaches an internal rules checking circuit.

Yazaki fails to teach an ingress filter coupled to the plurality of receive ports and an egress filter coupled to an output of the frame lookup components.

However, Sang teaches an ingress filter (Fig. 9, **200**) coupled to receive ports and distributing each of the received header information to one of the plurality of frame lookup components (col. 15, lines 49-67, col. 16, lines 1-15) and an egress filter coupled to an output of frame lookup components (Fig. 9, elements **230**, **210**, **220**, respectively), the egress filter receiving the frames from each of the frame lookup components and transmitting a single output stream of frame descriptors (col. 19, lines 17-22).

In view of this, having the system of Yazaki and then given the teachings of Sang, it would have been obvious to one having ordinary skill in the art at the time the invention was made, to modify the system of Yazaki, to include an ingress and egress filter in order to efficiently process the frame header and frame pointer information (col. 13, lines 64-66).

5. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yazaki in view of Gleeson et al. (US 6,763,023).

Regarding claim 16, Yazaki teaches a table address accessed by the destination address lookup component.

Yazaki fails to teach a hashing algorithm that hashes the destination field of the frame header.

However, Gleeson teaches a hashing algorithm that hashes the destination field of the frame header (col. 4, lines 50-56).

In view of this, having the system of Yazaki and then given the teachings of Gleeson, it would have been obvious to one having ordinary skill in the art at the time the invention was made, to modify the system of Yazaki, by including a hashing algorithm that hashes the destination field, in order to ensure proper receipt of data.

Allowable Subject Matter

6. **Claims 1-8** are allowed. Prior art fails to teach a source address learning engine connected to the first and second source address lookup components and address table, the source address learning engine, in response to a request from the first source address lookup component relating to a first frame, updating the first address table to include information relating to the frame forwarding information for the first frame, and in response to a request from the second source address lookup component relating to a

second frame, updating the address table to include information relating to the frame forwarding information for the second frame.

7. **Claims 11 and 14** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 11, prior art fails to teach a source address learning engine coupled to each of the frame lookup components, the source address learning engine, in response to a request from a source address lookup component, updating the common address table to include the frame forwarding information for the frame.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following references are cited: Method For Handling IP Multicast Packets In Network Switch, Kadambi et al, (US 2004/0170176); Network Relaying Apparatus and Network Relaying Method Capable of High-Speed Routing and Packet Transfer, Sugai et al., (US 2004/0085962); Network Switch With Mutually Coupled Look-Up Engine and Network Processor, O'Callaghan et al. (US 2002/0101867).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rhonda Murphy whose telephone number is (571) 272-3185. The examiner can normally be reached on Monday - Friday 8:00 - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571) 272-3139. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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SUPERVISORY PATENT EXAMINER
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